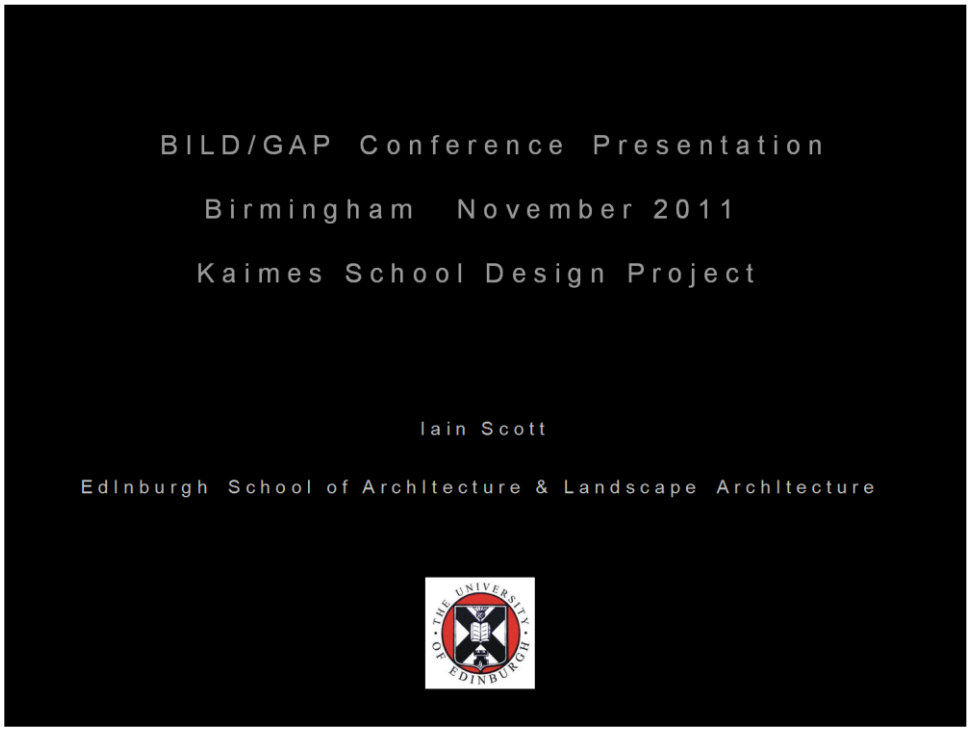
Presentation at British institute of Learning Disabilities GAP conference in Birmingham


BILD/GAP Conference Presentation
Birmingham November 2011
Kaimes School Design Project
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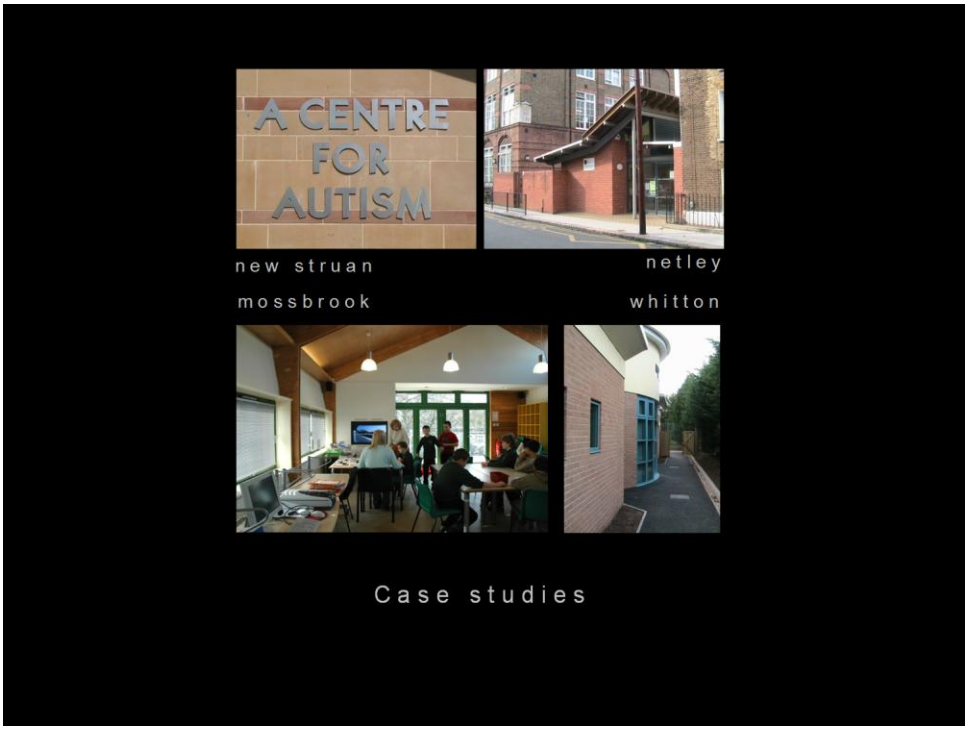
Title slide

This project was a response to a paper I published in 2009 entitled 'Designing Learning Spaces for Autistic Children.' This paper firstly completed a review of the existing body of knowledge in relation to Architectural Design/ Autism/ Classroom design in order to ascertain if there appeared to be specific design criteria or approaches being employed by Architects in the creation of these environments. Being an Architect myself and also the father of an autistic child it appeared to me that there was not much information out there to allow designers an insight not just into the complexities of the autism spectrum but the potential issues these complexities created for designers of the built environment.

Having extracted these criteria I then completed four case study analyses of new-build ASD units to discover if these criteria were being followed by designers in practice and also to uncover any new and potentially exciting creative approaches to the problem. This analysis included interviews with the Architects, Head teachers, class teachers and educational psychologists involved in the briefing and design process for the new building.



The four new buildings studied were:

• New Struan – Alloa, Scotland. The flagship new school of the Scottish Society for Autism.

• Netley School ASD unit, London. A bespoke new-build unit by ASD specialists Haverstock Associates within the grounds of the original Victorian school building.

• Whitton School ASD unit, London. A bespoke new-build ASD/ Language unit within the grounds of Whitton School, Twickenham, London.

• Mossbrook School science teaching space for children with ASD and associates disorders, by Sarah Wigglesworth Architects.

The majority of children with ASD are visual learners.

They find it difficult to learn through an abstracted medium such as text or to generalise learning across differing communicative methods. It seems they learn best through direct participation with their environment.

This creative approach was pursued by Sarah Wigglesworth Architects at Mossbrook Science teaching space with rooms dedicated to different scientific teaching processes. The designers utilise elements and materials which ‘tell their own story’ as well as using digital technology in diverse and holistic ways to gather the world outside, into the building.

'Designing Learning Spaces for autistic children' firstly attempts to elicit through a review of the existing, available body of knowledge; what is considered important design criteria, (in designing for autism), on the part of designers and health and education professionals.
This knowledge is then 'put to the test' through four case study analyses of new-built ASD units to ascertain in practice how the criteria are applied.
The case studies also flag up any new and exciting approaches to the subject.
The conclusion of the paper suggests that the criteria which presently exist, whilst useful in understanding how autistic people can be affected by their environment do not encourage designers to think in terms of creating new and exciting ways to help the autistic learning experience.
The challenge to designers is to create 'environments for learning' which enable their autistic users to learn about the world through direct participation in all aspects of their physical/ material environment.

paper published by GAP May 2009

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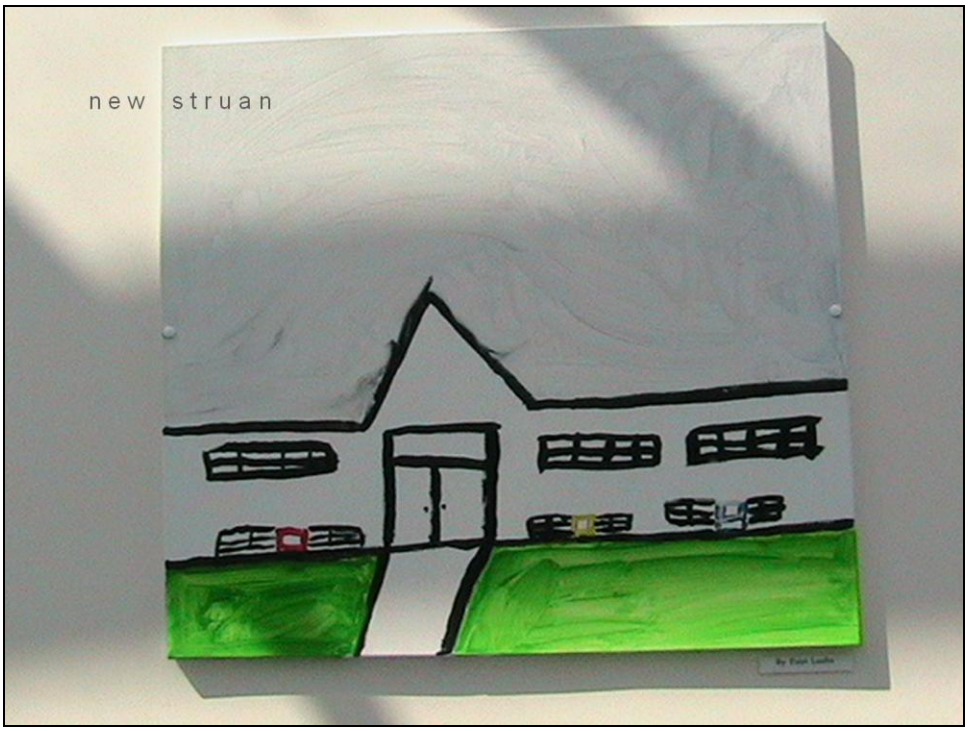
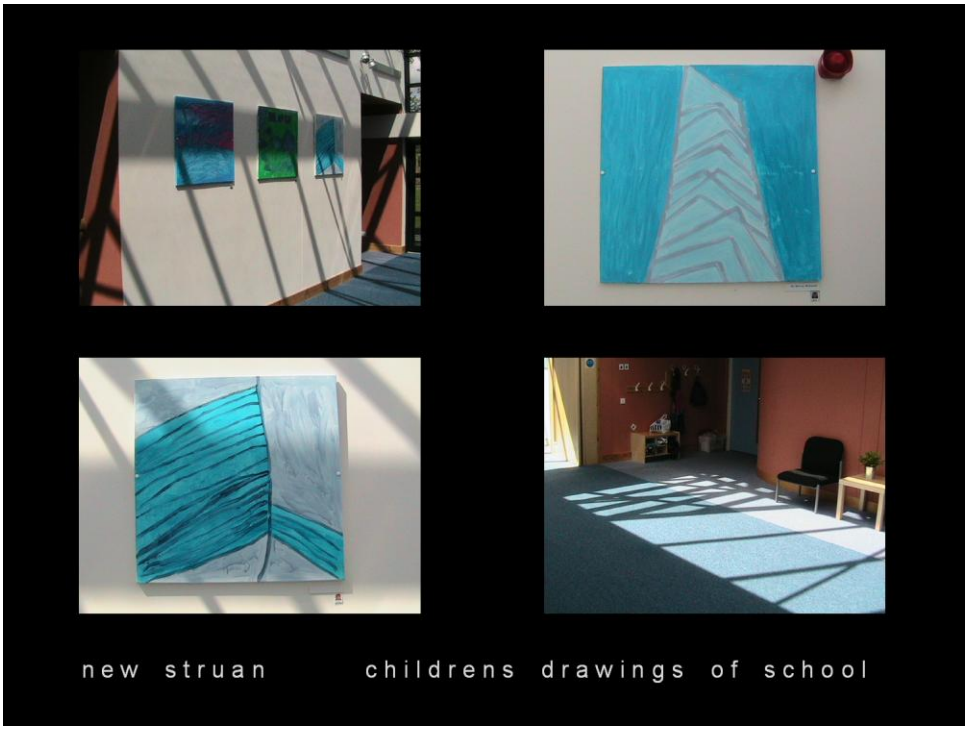


Having visited New Struan in Alloa as one of my case study buildings it was a delight to see paintings of the school which had been completed by the pupils on display in a fully curated way in the main circulation space. It seemed to me these gave a particular insight into the way that the children viewed the school as a cognitive image.



Many of the paintings displayed a concern for geometric patterning, the particular formal and spatial dimensions of spaces, including the way light fell within a space and was reflected on the surfaces of the building.

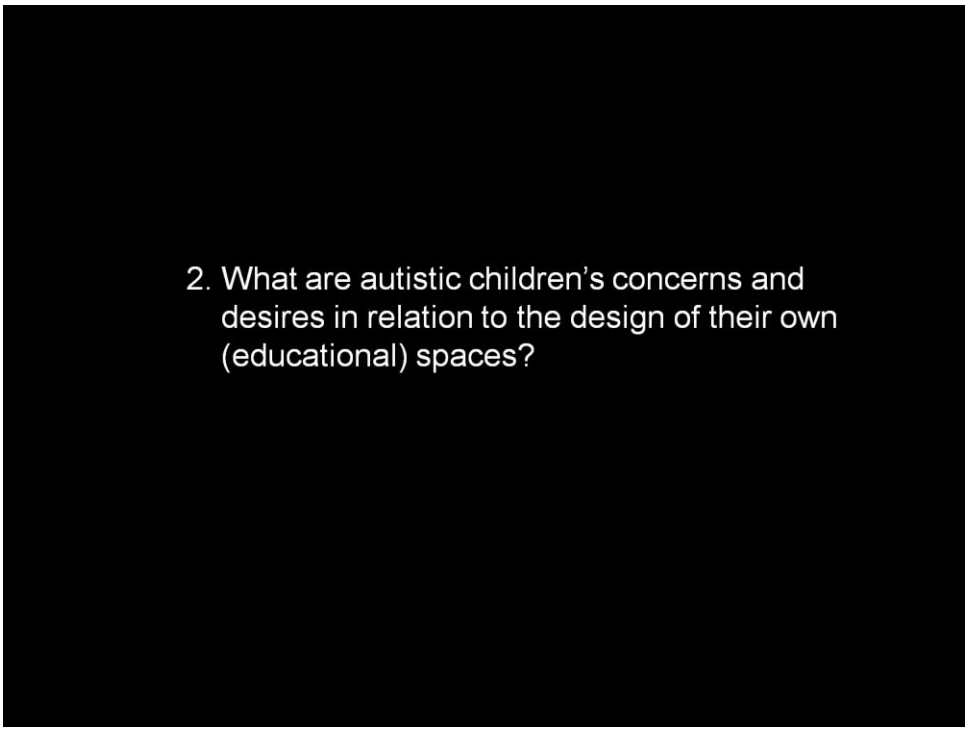
None of the drawings contained images of people. It certainly seemed that the autistic child appeared to lack emotional attachment to the subject matter and in a sense could then interpret space and form in a purer spatial way, unhindered by the various hierarchies of importance generated by attachment in individuals without ASD.

1. In what ways do autistic children's drawings of environments express their architectural/ psychological concerns and desires?

This generated a question which it appeared was worthy of some further investigation.

'In what ways do autistic children's drawings of the environment reflect their architectural and psychological concerns and desires'?

There exists a considerable body of work which reflects a growing interest in the interpretation of children's drawings as an educational, 'meaning–making' tool. Historically, analysis of children's drawings derives from two key discourses; Piaget's Developmental Learning theory and theories of Aesthetics (Piaget, 1956). These built on (Lauquet's, 1927) 'Stages of Drawing' theory arguing that drawing provides a window into the child's cognitive development. This subsequently led to analyses of drawing techniques as 'benchmarks' for children's cognitive development (Kellogg, 1969). Aesthetics theory as developed by Taunton (1982) and Smith(1989) focuses on essentially abstract ideas of aesthetic beauty in children's drawings as often demonstrated by their primal simplicity and lack of self-consciousness. Brooks (2003, p. 41) argues that: *'Aesthetics does little to address the many real problem- solving and meaning- making activities that are inherent in the process of drawing for young children'.* Also, in recent years there has been a shift from a de-contextualised, psychological focus on children's drawings towards an increased interest in children's meaning- making through drawing, and a focus on the socio- cultural contexts of drawing activity (Anning, 2003).
Brooks (2003) proposes the use of a Vygotskian theoretical framework for interpreting children's drawings.



This led me on to a second question:

'What are the autistic child's concerns in relation to the design of their own classroom environments'.?

It was also clear to me that in establishing criteria for the design of the 'autistic' class room the one key thing that had not been proposed was an attempt to involve the children on the autism spectrum in the design process and to interpret their needs and desires in relation to the spaces being designed on their behalf.

In beginning to consider what type of vehicle might be employed in such a project I went back to the Architectural design studio.

Architectural designs evolve from the ideas stage through the concrete evocation of proposals which both present and test ideas in two and three dimensions through the media of drawing and model making, (both digital and physical).

A series of projects run in the 1st year of ESALA attempt to engage students in making expressive proposals with a minimum of programme, essentially interrogating material concepts of architectural elements such as ground/ wall/ frame and canopy.

It was decided to employ this more elemental method of design as a way of allowing the children on the project to be as expressive as they could whilst also being able to interrogate material concepts such as form and materiality.

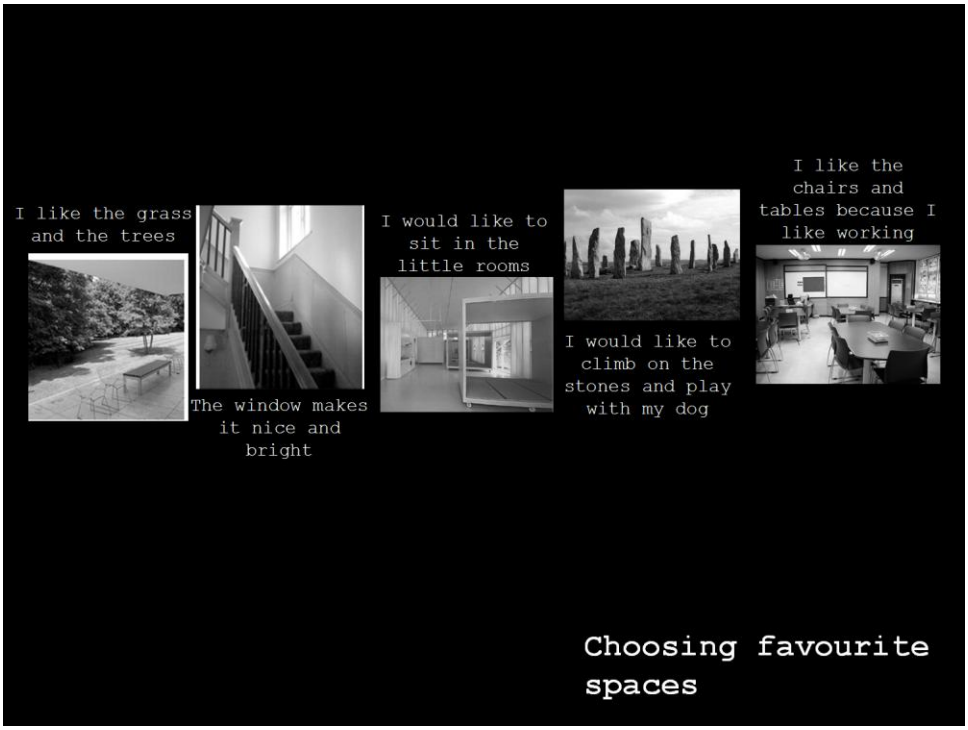
This method would be used in *addition t*o a drawing task which would allow for a clearer interpretation of meanings in the children's work.

It was also agreed that our role would be to elicit children's ideas of place and at no stage to suggest design alternatives. A related objective was the educational one using techniques that would facilitate and stimulate thinking and discussion necessary to the design process rather than in producing the final design proposal.

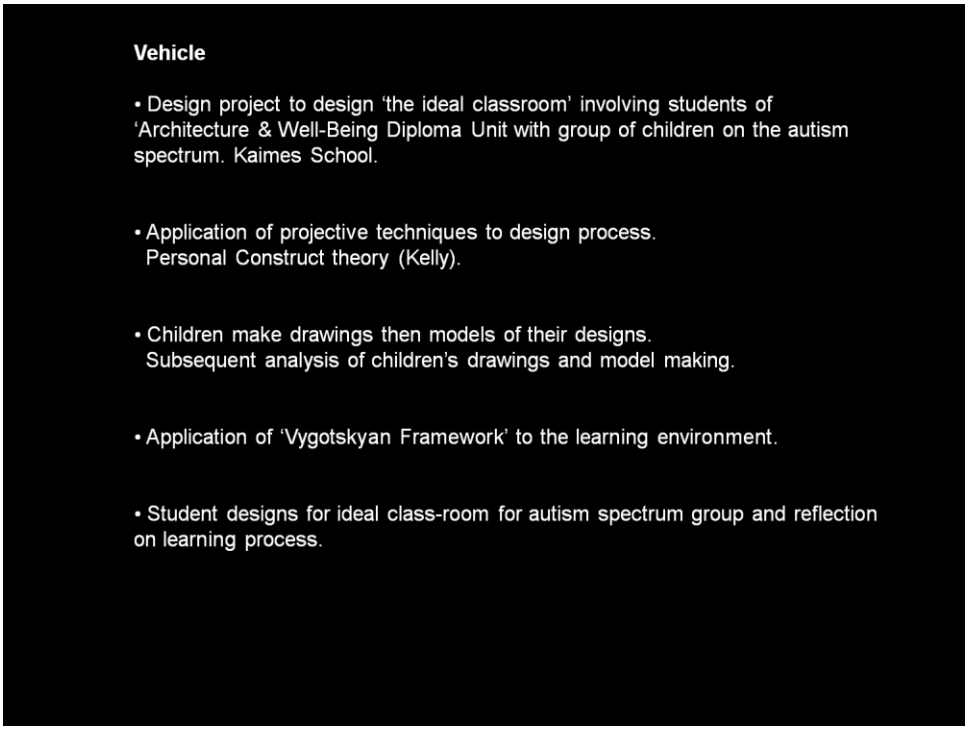
PCP techniques (Kelly,1955) can be used to elicit desires and wishes in relation to environmental experiences which may exist at a subconscious level. They can be applied by designers to explore the desires and concerns of clients which may go unstated in the brief for a proposed design. The basic premise of PCP is that our perceptions of the world are processed through a system of individual constructions rather than a firsthand interpretation of reality as found.

Pupils were presented with ten different sets of three images arranged horizontally and depicted in black and white. Each set of images was chosen to represent different aspects of environment and place which are considered to be important in designing for autism, such as ordered spatial structure, legible way- finding, security and independence, simple detailing etc. (Scott, 2010; Beaver, 2006). The children were then asked to select their favourite image from each set and expand on their reasons for that selection, explaining:

a) What they liked about it and why? (2 reasons).
b) What they did not like about it and why? (1 reason).
c) What would they like to do if they were there?
d) How could it be better?
e) Any other observations?



The questions were designed to elicit elements and constructs within three main categories. These were spatial experience, activities and design features. (Aspinall and Ujam, 1992). During the evening of day 3, each student made up a storyboard of their pupil's chosen images complete with some of the key constructs elicited from the questionnaire. This was then made available to each pupil during the model- making task for the following day, to form a basis for discussion on preferred elements to be included in the class- room The use of a picture based assessment is a common technique in PCP and was employed here as an appropriate method given the children's familiarity with other picture- based methods, (eg TEACCH, PECS and ABA among others).



Explanation of project vehicle including all constituent parts of methodology employed.

The project was run as a pilot in 2008-09, with pupils from a language unit at Craigentinny Primary in Edinburgh. This cohort included children on the autism spectrum as well as children from a mainstream class within the school.

The final version of the project was run at Kaimes School in Edinburgh during one full week of February 2010. Kaimes is a school for children and young people who have problems in the area of social communication, social interaction and flexibility of thinking. Most of the pupils have a diagnosis of Autism Spectrum Disorder.

Two classes involving twelve pupils; (11 male and one female), aged 13–15 years, were assigned to work with ten students from the Architecture and Well- Being Post-Graduate Diploma Unit.

Timetable
Monday

Visit by children to ECA (am).
12.30 -Visit to Museum of Scotland (pm)
12.45 – 1.45 Drawings of museum.

Tuesday
Am generally 9.30-10.30
10.30-11 break
11-12
Site visit. (Playground basketball court)
Take photos- do drawings/ measure.

Pm 1-2.30 Make site models.

Wed am
Students work with pupils using PCT projective techniques. To build up profile of desires/ wish lists / needs.
Wed pm
Children do drawings of their ideal classroom.

Wed pm
Children do drawings of their ideal classroom.

Thurs am
Children make models of proposals.
Thurs pm
Children continue to make models.

Fri am
Presentation

The timetable for the week was designed to allow each day to be considerably different from the next to keep activities fresh and invigorating.

The week was also organised to allow an ‘event’ day at the beginning where the children would visit the college of Art and a celebration day at the end where the work of the week could be presented to parents, teachers and fellow pupils.

Working sessions were no longer than one hour in the morning and 90 minutes in the afternoon. Students were acutely aware of the demands on the children and were encouraged to allow them to take breaks when they appeared to be tired or restless.

Materials required for the project.

2.no. A3 MDF board per child. (I. Scott will obtain).
2 packs plasticine per child. (Making grounds)
Crepe paper/ various colours.
Coloured paper/ card.
Pasta- spaghetti and penne.
Glue
Straws
Gravel, stone chippings.
Sponges
Egg cartons
Lollipop sticks.
Perforated card
Bubble wrap
String (coloured?)
Tin foil
Old clothing materials
Matchsticks
Polythene
Newspaper
Old plastic juice bottles/ bottle tops
Any other recycled materials students or staff think could be useful/ interesting.

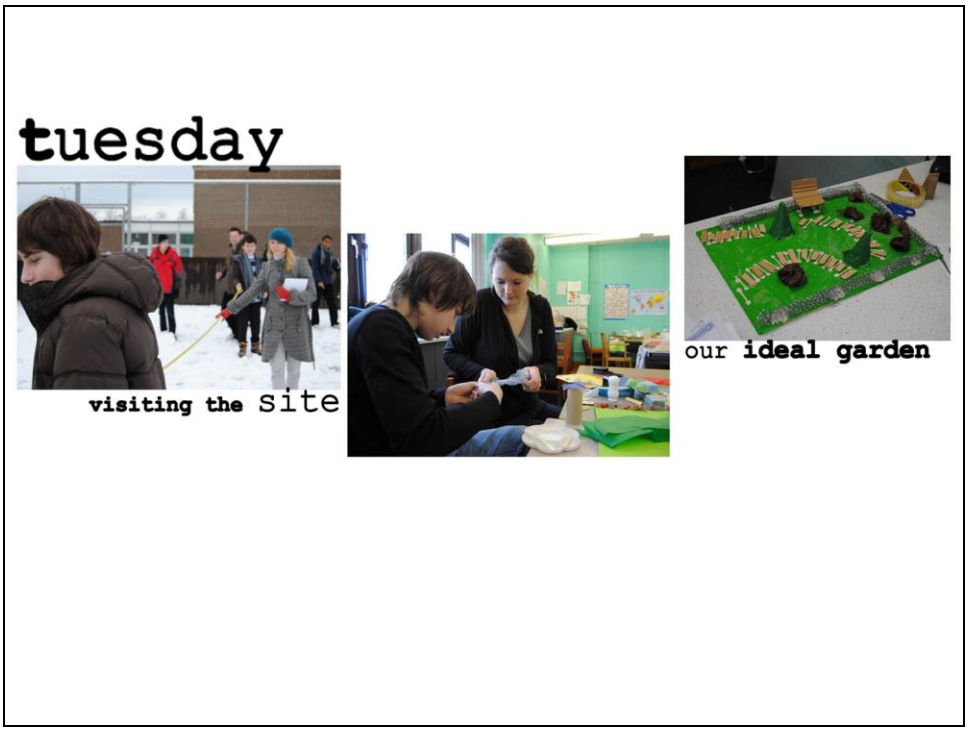
Materials required for the project.

A3 MDF boards are crucial for establishing a sound base on which to work and make models. It was also seen as important that the site for the project was similar in size to the dimension of the board (at a scale of 1 to 50).

Miniature model people can be bought from most model making shops at scales of 1:50 and 1:100 and most students of Architecture use these in order to give scale to their model propositions.

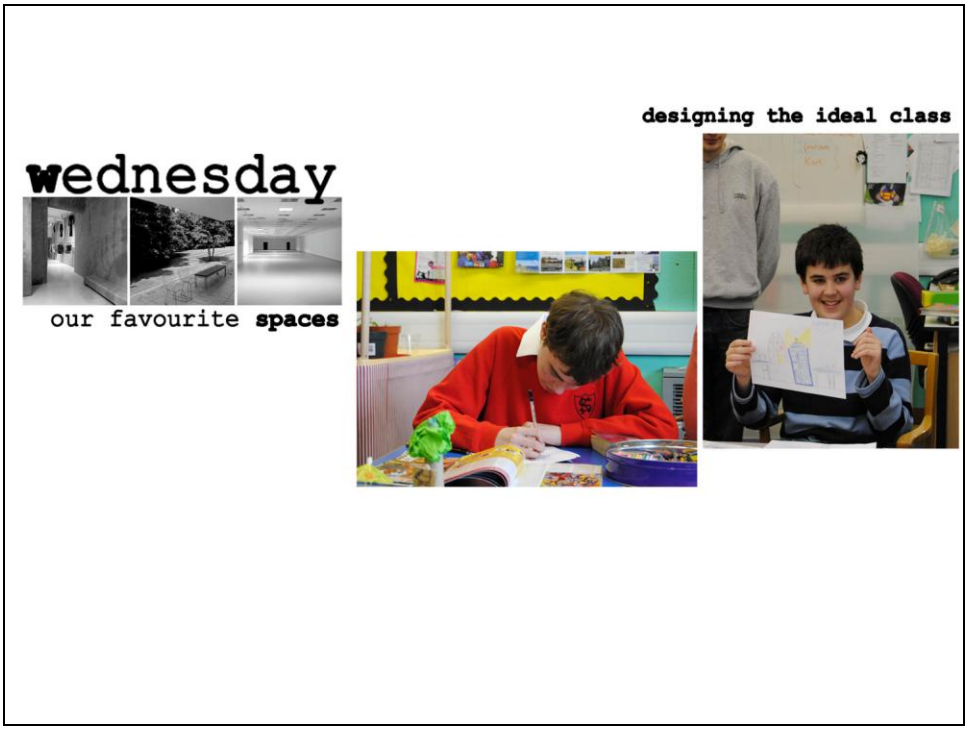
Materials for the project largely consisted of re-cycled material collected by pupils, parents, staff and students in the weeks leading up to the project.

The first day involved the children in a visit to Edinburgh College of Art where they were given a short slide presentation on the work they would be engaged in. They were also introduced to the work of the students through a tour of the architecture studios and visited an exhibition in the college sculpture court. During the afternoon the group visited the Museum of Scotland where they were engaged in a simple task to decide on a favourite building element (eg stair, window, display case, etc) and to draw it to the best of their ability. The principal purpose of the first day was to engage the pupils in an original social and educational experience, to allow the children and students to get to know one another and introduce the children to the week- long task. The rest of the week was spent working at their school.

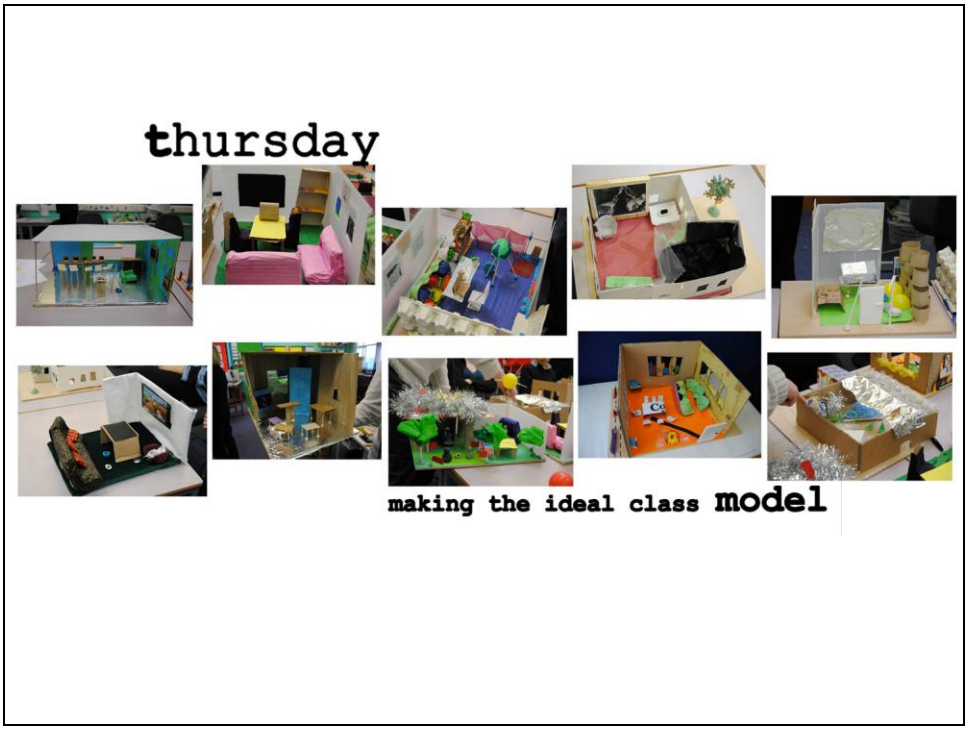


The morning of day 2 was spent visiting the site for the project. This was an existing basketball court outside the main school building. It was felt that this 'real- life' context would help the children to envisage an intervention, rather than attempting to imagine their 'ideal' classroom in no particular place.

In order to allow the pupils time to experiment with model- making and to gain confidence in working with the materials provided, the afternoon of Day 2 was spent making a design for a garden on the site. This also had the added advantage of illustrating to the pupils the imaginary nature of a design proposal.

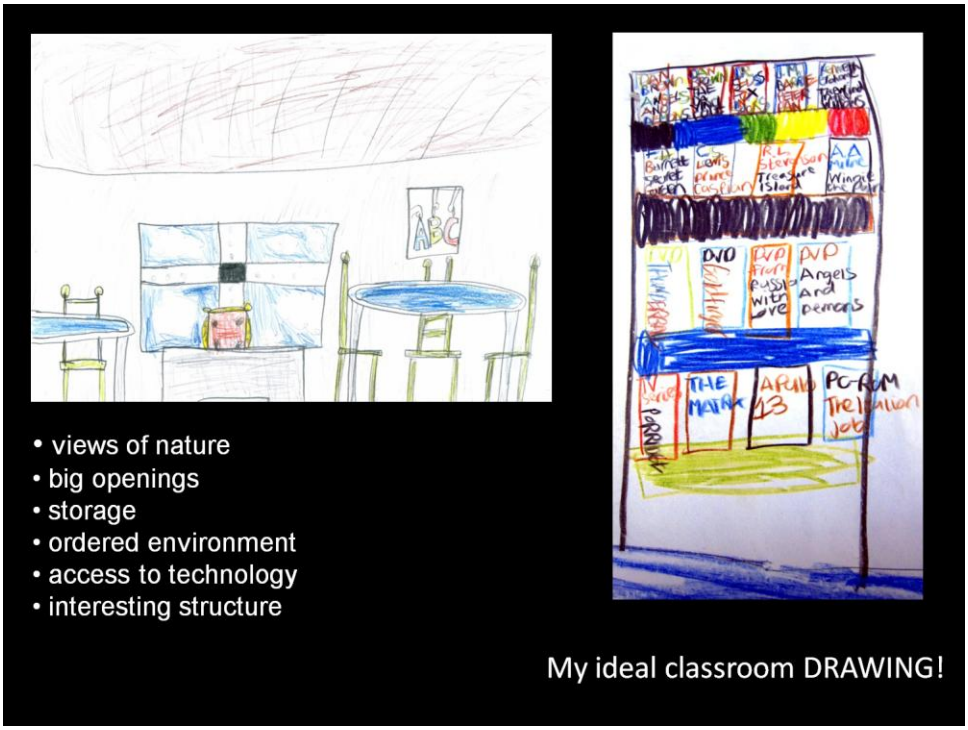


The morning of Day 3 was used to implement the projective technique of PCP to elicit the children's feelings about aspects of environment and space.
Students and pupils worked on a one- to- one basis for the full morning. Prior to the week of the project, students worked with the author to design the form and content of the PCP strategy.
The afternoon of Day 3 was spent drawing the ideal classroom. As before, students worked with children in pairs, discussing their ideas throughout the drawing task. At the end of the session a review session was conducted where the children presented their drawing to the entire class and a discussion was conducted by the author of the ideas contained therein. The focus of discussion was about the meaning and information it contained rather than on drawing skills and aesthetic qualities.

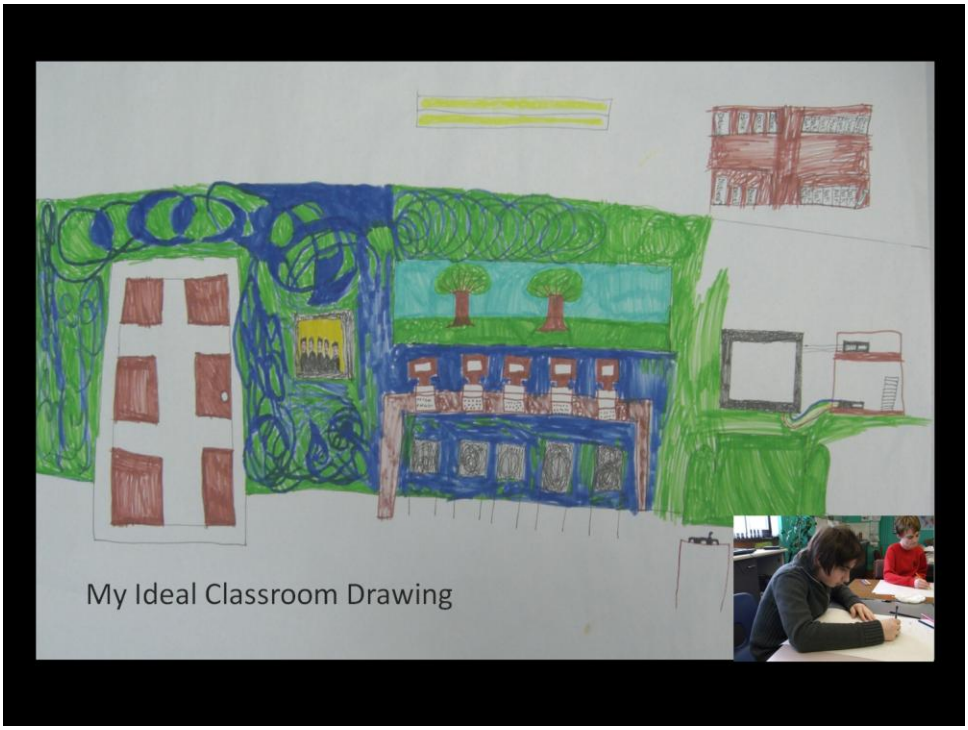


Based upon the drawings the children had completed, the children spent the day making models of their 'ideal classroom'. As before, students observed the work of the pupils on a one-to-one basis in groups of two, continuing to discuss their design proposals which were now three dimensional. For almost all of the children the model became an attempt to directly replicate the elements contained in the drawing in three dimensions.

Once again at the end of the session a review of the work was conducted. As Davis (2005) maintains, it is important to talk to children about their creations in order to fully understand their interests and intentions.



The pupils all displayed different skills and abilities in both the drawing and modelling tasks. All of the drawings produced contained aspects of various geometrical systems being employed. Some children employed the elevational method of placing elements along a baseline, each with the inherent hierarchy of important elements being placed in the centre of the image and less important elements to the outside. Each pupil also used elements of perspective to render particular objects in three-dimensions. Overlapping of objects was universally unpopular and each element chosen needed its own ‘personal space’.



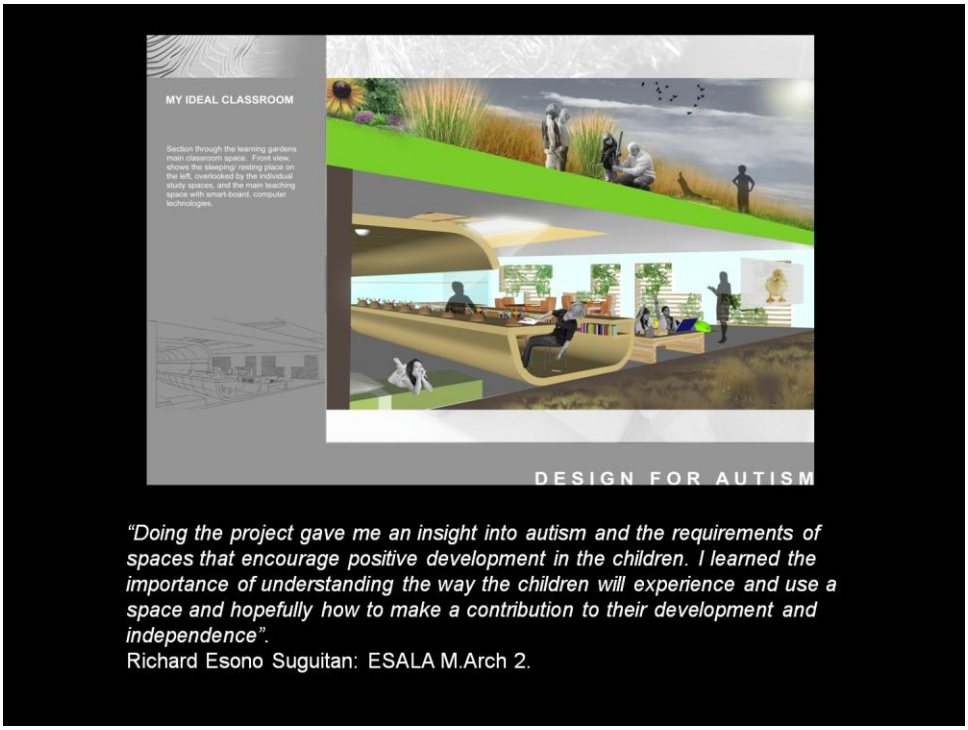
Key aspects of the criteria for designing for autism (Scott, 2009) such as access to nature, large and small spaces, views to the outside, order and clarity and the incorporation of technology are all clearly discernible from the material output of the children.

All of the pupils were interested in the opportunities afforded by using different materials to impart different qualities to elements within the space. They then realised that by placing elements within the main space, a series of different zones could be created. Concern for any three- dimensional qualities of the envelope were dismissed by each child as unimportant, clearly indicating that all of the pupils made little or no connection between space created and the resultant object. Pupils did find it easier when working on the model to determine the proportion of objects in relation to one another than they did in completing the drawing task.

Most children struggled to imagine what else could go into a classroom, beyond what their cultural and institutional associations said they already knew a classroom to be. It appears in certain instances that the existing school environment was a powerful 'frame of reference' for each child's proposal.

Daily review session

The children were able to filter and test ideas through their discourse with this small group of peers and adults. Upon completion of both the drawing and modelling tasks, a collective 'review' session was conducted which allowed proposals to be the subject of a critique by the whole group. On the final day of the project the children's parents were invited to a presentation and celebration of the work of the week at which parents were actively encouraged to discuss the work with their child and co- workers.



All the students prepared an analysis of the drawings and models produced by the children to identify consistent themes, environmental preferences and design elements. Using the knowledge gained from the work with the children the students then produced drawings and models of their own design for the ideal classroom on the same site. Lastly each student completed a post- design analysis of their proposal, highlighting key design features and their relevance to designing for autism.

'Analysis of a Project to Design The Ideal Classroom Undertaken by a Group of Children on the Autism Spectrum and Students of Architecture.' Published in GAP May 2011.

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